What is claimed is:

1. A method of distinguishing an auditory alert signal from a background of one or more other auditory signals, the method comprising:

estimating a background auditory level;

providing an auditory alert signal; and

providing an alert prefix signal, associated with the alert signal and having a selected spectral component within each of N selected frequency ranges ($N \geq 2$) lying in an interval from about 20 Hz to about 15000 Hz, at an auditory level at least M dB above the background auditory level in each of the N frequency ranges, where M is a selected real number in a range 3.0 - 10.0.

2. The method of claim 1, further comprising choosing at least one of said N frequency ranges to include a critical band of frequencies.

3. The method of claim 2, further comprising choosing at least one of said critical bands of frequencies from a sequence of bands having band centers that are approximately 150 Hz, 250, Hz, 350 Hz, 450 Hz, 570 Hz, 700 Hz, 840 Hz, 1000 Hz, 1170 Hz, 1370 Hz, 1600 Hz, 1850 Hz, 2150 Hz, 2500 Hz, 2900 Hz, 3400 Hz, 4000 Hz, 4800 Hz, 5800 Hz, 7000 Hz and 8500 Hz.

4. The method of claim 1, further comprising providing at least one of said spectral components as a chirped signal within at least one of said N frequency ranges.

5. The method of claim 1, further comprising:

providing a background sound value BSV_n, numbered $n = 1, 2, \ldots, N$, for each of said N frequency ranges, identifying a frequency range index, $n = n'$, for which $BSV_{n'} = \max\{BSV_1, \ldots, BSV_N\}$, and identifying at least two of the indices, $n = n1$ and $n = n2$, for which $BSV_{n1} < BSV_{n'}$ and $BSV_{n2} < BSV_{n'}$; and

providing said alert signal with first and second of said spectral components in said frequency ranges number n1 and n2, respectively.

6. A method of distinguishing an auditory alert signal from a background of one or more other auditory signals, the method comprising:

providing a selected alert signal at a first apparent location that is initially angularly displaced relative to a selected axis by a selected first azimuthal angle $\phi 1$; and

causing the apparent location of the alert signal to change to a second apparent location that is angularly displaced relative to the selected axis by a selected second azimuthal angle $\phi 2$, where $|\phi 1 - \phi 2| \geq 15°$, within a selected time interval.

7. The method of claim 6, further comprising allowing said apparent location of said alert signal to change to a third apparent location that is angularly displaced relative to said selected axis by a selected third azimuthal angle $\phi 3$, where $|\phi 2 - \phi 3| \geq 15°$, within a second selected time interval.

8. The method of claim 7, further comprising choosing at least one of said first azimuthal angle $\phi 1$, said second azimuthal angle $\phi 2$ and said third azimuthal angle $\phi 3$ so that at least one of the following constraints is satisfied: $|\phi 1 - \phi 2| \geq 30°$ and $|\phi 2 - \phi 3| \geq 30°$,.

9. The method of claim 6, further comprising choosing at least one of said first angle $\phi 1$ and said second angle $\phi 2$ to lie in a combined azimuthal angle range given by $-120° \leq \phi \leq -15°$ plus $15° \leq \phi \leq 120°$.

10. The method of claim 6, further comprising causing said change from said first apparent location to said second apparent location to occur continuously in said selected time interval.

11. The method of claim 6, further comprising causing said change from said first apparent location to said second apparent location to include at least one discontinuous change within said selected time interval.

12. The method of claim 6, further comprising choosing a duration Δt for said selected time interval lying in a range $0.01 \text{ sec} \leq \Delta t \leq 1 \text{ sec}$.

13. The method of claim 6, further comprising choosing a duration Δt for said selected time interval lying in a range $0.05 \text{ sec} \leq \Delta t \leq 0.2 \text{ sec}$.

14. The method of claim 6, further comprising providing said alert signal through first and second earphones positioned adjacent to first and second ears, respectively, of a subject.

15. A method of distinguishing an auditory alert signal from a background of one or more other signals, the method comprising:

forming a weighted sum of signals received adjacent to a first ear and adjacent to a second ear of a subject;

providing a first signal that is the weighted sum signal at a selected energy level at the first and second ears of the subject; and

providing a second signal that is a selected alert signal at a selected one of the first ear and the second ear.

16. The method of claim 15, further comprising providing as said second signal an alert signal having a selected spectral component within each of N selected frequency ranges ($N \geq 2$) lying in an interval from about 20 Hz to about 15000 Hz, at an auditory level at least M dB above said selected energy level in each of the frequency ranges, where M is a selected real number lying in a range 3.0 - 10.0.

17. The method of claim 16, further comprising choosing at least one of said spectral components to include a critical band of frequencies.

18. The method of claim 15, further comprising:

providing a third signal that is a second alert signal at an ear of said subject that does not receive said first alert signal, where said first alert signal and the second alert signal are distinguishable from each other.

19. The method of claim 18, further comprising:

providing as said second signal a selected alert signal at a first apparent location that is initially angularly displaced relative to a selected axis by a selected first azimuthal angle $\phi 1$; and

causing the apparent location of the alert signal to change to a second apparent location that is angularly displaced relative to the selected axis by a selected second azimuthal angle $\phi 2$, where $|\phi 1 - \phi 2| \geq 15^{\circ}$, within a selected time interval.

20. The method of claim 19, further comprising allowing said apparent location of said alert signal to change to a third apparent location that is angularly displaced relative to said selected axis by a selected third azimuthal angle $\phi 3$, where $|\phi 2 - \phi 3| \geq 15^{\circ}$, within a second selected time interval.

21. The method of claim 20, further comprising choosing at least one of said first azimuthal angle $\phi 1$, said second azimuthal angle $\phi 2$ and said third azimuthal angle ϕ so that at least one of the following constraints is satisfied: $|\phi 1 - \phi 2| \geq 30^{\circ}$, and $|\phi 2 - \phi 3| \geq 30^{\circ}$.

22. The method of claim 19, further comprising choosing at least one of said first angle $\phi 1$ and said second angle $\phi 2$ to lie in a combined azimuthal angle range given by $-120^{\circ} \leq \phi \leq -15^{\circ}$ plus $15^{\circ} \leq \phi \leq 120^{\circ}$.

23. The method of claim 19, further comprising causing said change from said first apparent location to said second apparent location to occur continuously in said selected time interval.

24. The method of claim 19, further comprising causing said change from said first apparent location to said second apparent location to occur discontinuously at least once within said selected time interval.

25. The method of claim 19, further comprising choosing a duration Δt for said selected time interval lying in a range $0.01 \text{ sec} \leq \Delta t \leq 1 \text{ sec}$.

26. The method of claim 19, further comprising choosing a duration Δt for said selected time interval lying in a range $0.05 \text{ sec} \leq \Delta t \leq 0.2 \text{ sec}$.

27. The method of claim 19, further comprising providing at least one of said first signal and said second signal through first and second earphones positioned adjacent to said first ear and said second ear, respectively.

28. A system for distinguishing an auditory alert signal from a background of one or more other auditory signals, the system comprising:

a sound level sensor positioned to estimate a background auditory level adjacent to a subject;

an alert signal source positioned to provide, adjacent to the subject, an alert signal; and

a prefix signal source positioned to provide, adjacent to the subject, a prefix signal, associated with the alert signal and having a selected spectral component within each of selected frequency ranges ($N \geq 2$) lying in an interval from 20 Hz to 15000 Hz, at an auditory level at least M dB above the background auditory level in each of the N frequency ranges, where M is a selected real number in a range 3.0 - 10.0.

29. The system of claim 28, wherein at least one of said N frequency ranges to include a critical band of frequencies.

30. The system of claim 29, wherein at least one of said spectral components is provided as a chirped signal within at least one of said N frequency ranges.

31. The system of claim 28, wherein:

said system estimates a background sound value BSV_n, numbered n = 1, 2, ... , N, for each of said N frequency ranges, identifies a frequency range index, n = n', for which $BSV_{n'} = \max\{BSV_1, ... , B_N\}$, and identifies at least two of the indices, n = n1 and n = n2, for which $BSV_{n1} < BSV_{n'}$ and $BSV_{n2} < BSV_{n'}$; and

said prefix signal is provided with first and second of said spectral components in said frequency ranges number n1 and n2, respectively.

32. A system for distinguishing an auditory alert signal from a background of one or more other auditory signals, the system comprising:

an alert signal source that:

provides a selected alert signal at a first apparent location that is initially angularly displaced relative to a selected axis by a selected first azimuthal angle $\phi 1$; and

causes the apparent location of the alert signal to change to a second apparent location that is angularly displaced relative to the selected axis by a selected second azimuthal angle $\phi 2$, where $|\phi 1 - \phi 2| \geq 15°$, within a selected time interval.

33. The system of claim 32, wherein said alert signal source:

allows said apparent location of said alert signal to change to a third apparent location that is angularly displaced relative to said selected axis by a selected third azimuthal angle $\phi 3$, where $|\phi 2 - \phi 3| \geq 15°$, within a second selected time interval.

34. The system of claim 33, wherein at least one of said first azimuthal angle $\phi 1$, said second azimuthal angle $\phi 2$ and said third azimuthal angle $\phi 3$ is chosen so that at least one of the following constraints is satisfied: $|\phi 1 - \phi 2| \geq 30°$ and $|\phi 2 - \phi 3| \geq 30°$.

35. The system of claim 32, wherein at least one of said first angle $\phi 1$ and said second angle $\phi 2$ is chosen to lie in a combined azimuthal angle range given by $-120° \leq \phi \leq -15°$ plus $15° \leq \phi \leq 120°$..

36. The system of claim 32, said change from said first apparent location to said second apparent location occurs continuously in said selected time interval.

37. The system of claim 32, wherein said change from said first apparent location to said second apparent location includes at least one discontinuous change within said selected time interval.

38. The system of claim 32, wherein a duration Δt for said selected time interval is chosen to lie in a range $0.01 \text{ sec} \leq \Delta t \leq 1 \text{ sec}$.

39. The system of claim 32, wherein a duration Δt for said selected time interval is chosen to lie in a range $0.05 \text{ sec} \leq \Delta t \leq 0.2 \text{ sec}$.

40. The system of claim 32, wherein said alert signal is provided through first and second earphones positioned adjacent to first and second ears, respectively, of a subject.

41. A system for distinguishing an auditory alert signal from a background of one or more non-alert signals, the system comprising:

a sound level sensor positioned to receive non-alert signal adjacent to a first ear and adjacent to a second ear of a subject and to form a weighted sum of non-alert signals received adjacent to the first ear and adjacent to a second ear;

an alert signal source that:

provides a first signal that is the weighted sum signal at a selected energy level at the first and second ears of the subject; and

provides a second signal that is a first alert signal at a selected one of the first ear and the second ear.

42. The system of claim 41, wherein said alert signal source provides a third signal that is a second alert signal at an ear of said subject that does not receive said first alert signal, where said first alert signal and the second alert signal are distinguishable from each other.

43. The system of claim 42, wherein:

at least one of said first and second alert signals includes a selected alert signal having a first apparent source at a first apparent location that is initially angularly displaced relative to a selected axis by a selected first azimuthal angle $\phi 1$; and

the selected alert signal changes to a second apparent source at a second apparent location that is angularly displaced relative to the selected axis by a selected second azimuthal angle $\phi 2$, where $|\phi 1 - \phi 2| \geq 15°$, within a selected time interval.

44. The system of claim 43, wherein said selected alert signal changes to a third apparent source at a third apparent location that is angularly displaced relative to said selected axis by a selected third azimuthal angle $\phi 3$, where $|\phi 2 - \phi 3| \geq 15°$, within a second selected time interval.

45. The system of claim 44, wherein at least one of said first azimuthal angle $\phi 1$, said second azimuthal angle $\phi 2$ and said third azimuthal angle $\phi 3$ is chosen so that at least one of the following constraints is satisfied: $|\phi 1 - \phi 2| \geq 30°$ and $|\phi 2 - \phi 3| \geq 30°$.

46. The system of claim 41, wherein at least one of said first alert signal and said second alert signal includes at least one frequency from a critical band of frequencies.